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ABSTRACT

Prior to fall 1974, faculty workload at Black Hawk College (Moline, Illinois) was determined on the basis of total semester hours taught. Now it is based on the equitable teaching load, as agreed upon by the department chairman and the faculty member, subject to administrative approval. This new method of computation is based on departmental goals for production of student credit hours, and recognizes such factors as the number of preparations, the amount of time spent in course development, and the amount of time spent in committee work. In order to determine whether or not this new method had resulted in a reduced faculty workload in the composition, literature, philosophy, and journalism department, the author reviewed the student credit hours produced by each full-time equivalent teacher in the department from fall 1970 through spring 1976. The review indicated that the productivity of full-time teachers in that department, as measured by student credit hours, has not changed significantly as a result of the new faculty workload system. This suggests that general department satisfaction with the new system does not result from an actual reduction in workload, but from other factors. A brief literature review and bibliography are included, as are a review of the research methodology used and recommendations for further studies. (DC)

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THE EFFECT OF THE NEW FACULTY WORKLOAD SYSTEM ON THE PRODUCTION OF STUDENT CREDIT HOURS BY FULL-TIME FACULTY IN ONE DEPARTMENT AT BLACK HAWK COLLEGE

BY

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A PRACTICUM PRESENTED TO NOVA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF EDUCATION

NOVA UNIVERSITY
June 15, 1976

ABSTRACT

TITLE: The Effect of the New Faculty Workload System on the Production of Student Credit Hours by Full-Time Faculty in One Department at Black Hawk College

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This study undertook an evaluation of the effect of a new faculty workload system upon the production of student credit hours by full-time faculty in the composition, literature, philosophy, and journalism department at Black Hawk College, Moline, Illinois. Before the fall semester of 1974, workload was determined on the basis of equated semester hours taught, but, beginning at that time, it was based upon a joint agreement of an equitable teaching load of department chairman and faculty member, subject to administrative approval and recognizing factors such as number of preparations, the development of new courses, and exceptionally heavy committee work. This study reviewed the student credit hours produced by each full-time-equivalent teacher from the fall semester of 1970 through the spring semester of 1976, or for four years under the old and two years under the new load system. It tested the null hypothesis, "The productivity of full-time teachers in the composition, literature, philosophy, and journalism department, as measured by student credit hours, has not changed significantly as a result of the new faculty workload system," by means of a t-test at a critical level of .05. As a result of this test, the null hypothesis was retained, and it was concluded that within the limitations of the study, there has been no statistically significant change.

TABLE OF CONTENTS

Page

LIST OF TABLES ii

Chapter

1. TITLE..... 1
2. STATEMENT OF PROBLEM..... 1
3. HYPOTHESIS..... 2
4. BACKGROUND AND SIGNFICANCE..... 3
5. DEFINITION OF TERMS..... 9
6. LIMITATIONS OF STUDY..... 12
7. BASIC ASSUMPTIONS..... 15
8. PROCEDURES FOR COLLECTING DATA..... 16
9. PROCEDURES FOR TREATING DATA..... 18
10. RESULTS..... 19
11. CONCLUSIONS AND SIGNIFICANCE..... 23
12. FURTHER STUDIES..... 25

BIBLIOGRAPHY..... 26

APPENDIXES

A. FORM OF SURVEY OF FACULTY FOR RELEASED TIME DATA. 27
B. DATA ON WORKLOAD AND RELEASED TIME..... 28
C. CALCULATION OF T-TEST..... 34
D. CALCULATION OF STANDARD DEVIATIONS..... 35
E. PERSONAL STATEMENT..... 36

LIST OF TABLES

Table — Page

1. Composition, Literature, Philosophy, and Journalism Department, Black Hawk College, Full-Time Equivalent Teachers and Credit-Hour Means by Semester under Two Workload Systems..... 20

2. Composition, Literature, Philosophy, and Journalism Department, Black Hawk College, Credit Hour Means by Semester under Two Workload Systems..... 21

3. Analysis of Data in T-Test..... 22

I. TITLE:

The Effect of the New Faculty Workload System on the Production of Student Credit Hours by Full-Time Faculty in One Department at Black Hawk College

II. STATEMENT OF THE PROBLEM

Before the 1974-75 academic year, faculty workload at Black Hawk College was determined upon the basis of total semester hours taught. To accommodate special teaching conditions and provide released time for non-teaching duties, a complex system of equations was applied to the totals. However, on April 14, 1974, the Quad-Cities Campus Faculty Senate approved an experimental faculty workload policy for implementation in the fall semester of 1974, which was subsequently approved by the Board of Trustees. This new system is based upon departmental goals of student credit hours produced, and it provides for an individual determination of appropriate load by mutual agreement of faculty member and department chairman. Thus, it gives the flexibility to deal with non-traditional delivery systems, and it acknowledges the financial significance to the college of the production of student credit hours, upon which its two major sources of income--student tuition and state apportionment--are based.

The policy approved by the Faculty Senate in the spring of 1974 established a time table for the evaluation of an experimental use of the procedure. This time table has not been followed, and, although the college has experienced considerable

budgetary problems since this time, no systematic investigation of the impact of the new workload system, especially its financial impact, has been conducted.

Although the work of this practicum did not aim to make such a complete study, it did intend to determine the new workload's effect upon the production of student credit hours by full-time faculty in one department of the college--the composition, literature, philosophy, and journalism department--at mid-semester, the enrollment date upon which state apportionment is based. These figures were analyzed for each fall and spring semester from the fall of 1970 to the spring of 1976. Then, a comparison of productivity under the older system and the new system was made. The intent was to determine whether or not productivity of full-time teachers in the composition, literature, philosophy, and journalism department, as measured by student credit hours produced at mid-semester, had changed significantly as a result of the new load system.

III. HYPOTHESIS:

The productivity of full-time teachers in the composition, literature, philosophy, and journalism department, as measured by student credit hours, has changed significantly as a result of the new faculty workload system.

IV. BACKGROUND AND SIGNIFICANCE

In 1919, Koos wrote, "One of the largest problems in the administration of educational institutions is that of the proper method of determination of the working load of the instructional staff."[1] Since that time, there have been countless studies of faculty workload and countless conclusions. Most have failed to result in satisfactory methods of measuring the loads of faculty in terms of both quantity and quality. The purpose of this practicum, however, was not to critique Black Hawk College's faculty workload system from these points of view; rather, it was to determine its impact in relation to the productivity of full-time teachers in one department as measured by student credit hours produced. Nevertheless, many of these classic studies of faculty workload were motivated by the same factors that prompted this practicum. In the typical college or university, faculty salaries are 60-80 percent of the budget; thus, they are of major financial significance.[2] In addition, any analysis of faculty activity can assist in long-range planning, in program review and evaluation, in budgeting, and in resource utilization analysis.[3]

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[1] L.V. Koos, The Adjustment of the Teaching Load in a University (Department of the Interior, Bureau of Education, Bulletin No. 15. Washington, D.C.: Government Printing Office, 1919), p. 5.

[2] Leonard C. Romney, Faculty Activity Analysis (Technical Report No. 24, National Center for Higher Education Management Systems at Western Interstate Commission for Higher Education, Boulder, Colorado: 1971), p. 1.

[3] Ibid., p. 16.

And, finally, the emergence of collective bargaining in higher education at the same time that there are increased demands for accountability requires systematic studies of workload.[1] For these reasons, it is essential that the impact of Black Hawk College's new workload system upon faculty productivity be evaluated. Recently, two administrators at Black Hawk College--the college president and the vice president for finance--"strongly emphasized the need for an assessment of teaching loads because of their important budgetary impact."[2]

Up until 1974, the workload system at Black Hawk College had undergone considerable variation. For a number of years before 1972, load was 14 equated semester hours, but the equations applied for individual teaching loads were in constant flux. During the 1972-73 academic year, load was increased from 14 equated semester hours to 17 because of financial exigency, and the following year, normal load was increased to 15 semester hours, at which it stayed for one year before the implementation of the new load policy.

Under the experimental load system implemented at Black Hawk College in the fall of 1974, each college department has a student-credit-hour goal, calculated by averaging the number of student credit hours generated by the department over the past three years.

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[1] John E. Shay, Jr., "Coming to Grips with Faculty Workload," Education Record, 55:52[Winter, 1974].

[2] Thomas Quayle and Mary A. Stevens, "Developing a Policy on Institutional Research," [unpublished practicum, Nova University, March 20, 1976], p. 34.

Teaching assignments to individual faculty are determined by agreement between the department chairman and the faculty member, subject to the approval of the appropriate division chairman and dean. They are to acknowledge such factors as new course development, the number of preparations, and unusually heavy committee work.

In addition to allowing departments the opportunity to manage their faculty resources themselves and to providing the flexibility in determining faculty workloads required by non-traditional delivery systems--especially the variable-entry, variable-exit system--this workload system acknowledges the financial significance to the college of the production of student credit hours, upon which its two major sources of income--student tuition and state apportionment--are based. Thus, if this workload system is to be effective, it must require not only that each department meet its student-credit-hour goal but also that it do so with existing staff and without additional full- or part-time faculty, unless such increases are required by significant enrollment increases.

Within the composition, literature, philosophy, and journalism department, this new workload system has been implemented along the policy guidelines. Departmental guidelines have been developed; the department members have been notified each semester of the department's credit-hour goal and of its success in meeting that goal; and each full-time member of the department has been informed of the workload--number of semester hours, preparations, and

student credit hours and the amount of released time--of all department members. On November 21, 1975, at the time of the approval of the departmental guidelines, only one department member spoke in opposition to the new workload system, and she had no workload at that time because she was on sabbatical leave. Thus, in general, the department has operated smoothly under the new system and seems to be satisfied with it.

Part of this satisfaction undoubtedly results from the situation that, since most courses taught in the department are traditional in format, it has been possible to continue to think in terms of semester hours of load; hence, most members of the department have been comparatively untouched by the new policy. However, two other factors suggest that part of the satisfaction may result from an actual reduction in teaching load as measured by student credit hours for full-time faculty, with, as a result, an increase in the number of student credit hours taught by part-time faculty. First of all, in the spring of 1975, the department voted to decrease maximum enrollment in its five-hour remedial composition course from 27 to 17 students so that teachers would have more time for each student. The full effect of this change will not be evident until after this current academic year because its implementation was delayed until this current semester. Yet, it can be expected to require the opening of additional sections of this course, probably taught by additional part-time teachers. Secondly, full-time members of the department have been developing at an increasing rate rather

specialized courses in literature and philosophy at the same time that there has been a proportional decrease of enrollment in literature. Such literature courses have, therefore, tended to have less enrollment than in the past, a condition that once again suggests an increased cost for part-time teachers to teach the composition courses that full-time teachers would teach if they were not teaching newly-developed literature courses. And, in addition, under the new workload system, on occasion teachers have used these new preparations as justification for a reduced teaching load.

Thus, a study of the effect of the new workload system upon the production of student credit hours by full-time teachers in the composition, literature, philosophy, and journalism department seems called for. In addition, although a time-series design, such as this study must be, ordinarily cannot be demonstrated to have external validity, it can serve as a justification of and a model for similar studies in other departments, with possibly very significant results to the college, and as the beginning of a continuing study within the department. Such a study has not been undertaken by the college administration, even in a time of budgetary problems, and no systematic follow-up study on the experimental workload system has been undertaken by the Faculty Senate. Such a study is, therefore, needed.

In the study that was undertaken in this practicum, the independent variable was the new workload system, which was implemented in the fall semester of 1974. In a time-series experiment such as

this one, changes closest in point of time to the introduction of the independent variable are of the most significance. Since fall schedules for full-time faculty in the composition, literature, philosophy, and journalism department were established in the spring of 1974 before the adoption of the new workload system, it was not expected to have any significant results during the fall semester of 1974. Instead, the major effects of the policy were expected to be evident in the spring and fall semesters of 1975. However, the impact of newly-developed literature courses upon student credit hours produced was not expected to become evident until the 1975-76 academic year because of the time required following the implementation of the new load system for their development. Thus, the two-year time period following the implementation of the new workload system was the time in which the impact of that new system, the independent variable, could be studied with most validity.

The dependent variable was the mean student credit hours produced by one full-time equivalent teacher in the department. Although this data for the period from the fall semester of 1970 was readily available in surveys made by the Dean of the University Parallel Programs at Black Hawk College and in his records, there were discrepencies in this data and some other variables not recognized in it that could have resulted in errors in instrumentation unless standards were established and verification was made. The procedures used in this practicum corrected such errors.

V. DEFINITION OF TERMS

1. Composition, Literature, Philosophy, and Journalism Department--A department on the Quad-Cities Campus within the Division of Fine and Applied Arts and the University Parallel Programs. In addition to those courses suggested by its title, all of which are transfer in nature, this department also offers courses in communications and technical writing to students enrolled in the Career Programs. In addition, it also has a large offering in reading skills, which is a transfer course.
2. Faculty Senate--A group of elected faculty representatives reporting to the campus provost and representing subject area divisions within the college. The Faculty Senate and its subcommittees make the first decisions and recommendations on academic policy, curriculum, and personnel policies and procedures, excluding those relating to compensation.
3. Full-Time Teacher--A teacher who is tenured; non-tenured but in a tenure-track position; or on a one-year, full-time contract. He holds academic rank and is paid according to the salary structure for full-time teachers.
4. Full-Time Equivalent Teachers--The adjusted number of full-time teachers available for full-time teaching assignments after the total amount of released time for duties other than teaching has been subtracted. Those duties for which released time is given include advisement of student publications and administrative responsibilities. Also in this study, the term Full-Time Equivalent

Teacher was limited to those teachers that were on full-time contracts, as opposed to part-time teachers, the number of whom could also have been computed to a full-time equivalency.

5. Mid-Date of Semester--That calendar date which is at the mid-point of the semester in time. It is determined each semester by the college for its reporting to the Illinois Community College Board, and state apportionment is paid upon the enrollment at that date. Since this date is established somewhat artificially for students enrolled in variable-entry classes, who do not fit easily within the traditional academic calendar, their enrollment may be reported for a semester other than the one in which they begin courses.
6. New Workload System--The system implemented on an experimental basis in the Fall of 1974. It establishes departmental credit-hour goals and provides for the negotiation of a satisfactory workload between department chairman and faculty member.
7. Part-Time Teacher--A teacher who is not tenured and is not eligible for tenure. Also termed "adjunct faculty," part-time teachers are paid on the basis of equated semester hours taught, ranging from $210 to $250 per semester hour, depending upon the adjunct faculty rank that they hold.
8. Semester Hour--Equivalent to the number of credit hours that a student earns for satisfactory completion of the course. Credit hours earned in the course are determined by multiplying the semester hours for the course by the number of students enrolled. Equated semester hours describe courses in which the possible

credit hours earned by each student do not adequately describe the teacher's responsibilities for the course--for example, equations used in establishing teacher credit for lab courses in the sciences. From 1962 to 1974, English composition courses, which were valued at three semester hours in terms of student credit hours, were valued at 3.5 semester hours in terms of faculty load because of the paper-grading required in these courses.

9. State Apportionment--A flat rate varying in amount among programs paid to the college by the Illinois Community College Board on the basis of total student credit hours taught at mid-date of each semester. This rate is established prior to each academic year by the state legislature, which also allocates the funds necessary to meet anticipated enrollment predictions. However, during the last two fiscal years, because enrollments have exceeded predictions, state apportionment has not been paid at the rate originally determined by the legislature, but at a lower rate.
10. Student Credit Hours--The number of semester hours of credit that a student earns in a course if he completes it with a grade of "D" or above.
11. Variable-Entry Course--An individualized course for which a student may register and in which he may begin work on any day within the academic year and, in some cases, during the summer session. The student may work at his own pace as long as he completes the course within a specified length of time, usually not longer than twenty weeks.

VI. LIMITATIONS OF STUDY

This study involved a time-series experiment--that is, data was analyzed for each semester over a six-year period, beginning with the 1970-71 academic year and ending with 1975-76, those years for which data of the type needed was available. Within this time period, the college changed to a new faculty workload system during the 1974-75 year. Since the entire college changed to this new system at the same time, no control group could be established. As a result, as in all time-series experiments, the results of this study lack external validity. If, however, the study were to be repeated within other departments of the college and if the findings were similar, a principle could be established on the basis of this study and others modeled upon it.[1]

A time-series experiment such as this one also lacks certain internal validity, especially in its inability to control history and maturation. Also, if the personnel studied has changed during the time period, this design fails to control selection. These inadequacies in relation to internal validity accounted for some of the variables in this study, and, as a result, for some of its limitations.

A number of possible variables contributing to limitations resulted simply from history. One such variable had no effect in relation to the hypothesis of this study, and that was the use of a number of different systems for determining faculty load prior to

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[1]Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research(Chicago: Rand McNally College Publishing Company, 1963), p. 42.

1974-75. However, other historical changes resulted in variables that were of significance, that could not be controlled, and that, therefore, resulted in limitations in the study. Johnson reports that instructional loads for faculty have been decreasing nationally,[1] and Medsker and Tillery quote an AAJC study that shows that student-teacher ratios fell from 1:26.6 in 1965 to 1:23 in 1969.[2] It was impossible in this study to control such a possible variable as the effect of such a national trend on Black Hawk College, if such a trend has, in fact, had an effect. In addition, during the time period studied there were shifts in enrollment among courses, especially away from literature courses, that could have affected the productivity of full-time teachers, who teach almost all the literature courses. Such an effect could have occurred because literature classes that once had full or almost-full enrollments now have enrollments farther from the maximum. It was not possible in this study to control this variable, nor did the hypothesis require that it be controlled. It was also impossible to control the variable resulting from general enrollment decreases or increases in the department, which could affect the enrollments within individual sections of courses and, thereby the total number of student credit

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[1]F. Craig Johnson, "Studying Teaching and Learning," in Institutional Research in the University: A Handbook, ed. Paul L. Dressel(San Francisco: Jossey Bass, 1972), p. 129.

[2]Leland L. Medsker and Dale Tillery, Breaking the Access Barrier: A Profile of Two-Year Colleges(New York: McGraw-Hill, 1971), p. 93.

hours taught by full-time faculty. Also the degree of teacher productivity can be affected by the chances of scheduling: the number of sections of a course offered, which can affect the total enrollment in any one section; the time of the day that full-time teachers are assigned classes, which can vary from semester to semester and, which, thereby, can affect enrollments since late afternoon and evening classes ordinarily do not have the number of enrollments that classes offered at other times do; and variations in the ability, preparation, and responsibility of students from semester to semester, which can affect the attrition rate to the mid-date of the semester. It was impossible in this study to control these variables, and, as a result, limitations in the study resulted.

Added to these intervening variables resulting from a failure of this design to control history was an additional intervening variable resulting from a failure of the design to control maturation, with the limitations resulting from this failure. As is demonstrated in Appendix B, the teaching personnel within the department for the time period studied remained fairly constant, but within this group it can be assumed that maturation occurred--that is, that with more teaching experience and education, full-time members of the department became better teachers, more capable of attracting students and retaining them until semester mid-date. Such a variable could not be controlled in this study and can result in limitations; however, under the present salary structure of the college, a teacher is not expected to teach addition numbers of students as he becomes more experienced or is promoted in academic rank.

VII. BASIC ASSUMPTIONS

It was assumed that the student population would not vary significantly from year to year in relation to the likelihood that they would remain in a course until mid-date of the semester.

It was assumed that the results of teacher maturation would have little effect on quantitative measures of productivity, namely, upon student credit hours produced.

It was assumed that national trends toward lower student-teacher ratios have not affected the population studied. Instead, with administrative concern for increased productivity and reports that productivity has increased, it was assumed that the productivity of teachers studied should have increased during the time period studied at approximately the same rate as it had increased for the college as a whole, from a 19:1 student ratio in 1972-73 to a 23:1 student ratio in 1974-75.

It was assumed that uses of non-traditional delivery systems and individualized instruction would have no significant effect upon productivity, especially since their use has been somewhat limited in the department studied as compared to other sectors of the college and since they have not been introduced to increase productivity.

It was assumed that any decrease of 5% or more in faculty productivity following the implementation of the system would be of significance. This figure is an arbitrary one, but extended over the present department with the current total salaries of

full-time teachers in the department of approximately $250,000, it would represent an annual financial loss of about $12,500, an amount sufficient to hire one additional beginning full-time teacher.

VIII. PROCEDURES FOR COLLECTING DATA

1. From the office of the Dean of the University Parallel Programs, totals of student credit hours at mid-date of each semester for each full-time teacher in the department were collected for each semester from the fall of 1970 to the spring of 1976. Four instances of unusual totals occurred within these data. These were verified or corrected by checking section number totals against class rosters at mid-semester in the registrar's office or by checking the assignment of sections to teachers against records of such in the department chairman's office. In one case, sections taught by two teachers in the department with the same surname had been confused; in another, a class section had been added late and had not appeared in the class schedule nor in the dean's records but did appear in the class rosters in the registrar's office; in another, one class originally assigned to one teacher had been taught by another but a correction had not been made in the dean's records; in the fourth, even though unusual, the total was correct.
2. A list by semester of each full-time member of the department was compiled for those activities which resulted in released

time or in the production of student credit hours that had been credited to another department. Records of released time were not available either in the dean's office nor in the department chairman's office. Therefore, the amount of released time was determined by means of a simple questionnaire to all full-time teachers in the department. [See Appendix A.] All teachers returned the questionnaire. These responses were then checked and verified by the acting department chairman, who also furnished information in this respect concerning teachers no longer employed in the department. Only one instance of confusion concerning the assignment of student credit hours to another department occurred, and that was the assignment to the liberal studies program area of credit hours earned by one faculty member in one course in the fall of 1975. This discrepancy was corrected by assigning this teacher an appropriate amount of released time from departmental teaching assignments for that semester so that the full-time teacher equivalency for that semester accurately reflects the teaching occurring within the department. From discussion with the Dean of the University Parallel Programs and the faculty involved in the study, it was also determined that the method used to report student credit hours in variable-entry sections had been used consistently through the time period studied, and, therefore, was as accurate as possible for the purposes of the study. Therefore, no changes in data concerning these sections were made.

The results of this collecting of data are included in Appendix B.

IX. PROCEDURES FOR TREATING DATA

1. The number of full-time equivalent teachers in the department for each semester during the study was determined by subtracting from the number of full-time teachers employed each semester the number of full-time equivalent teachers of released time within the department for that semester. For data from before the fall of 1974, when workload was determined by equated semester hours, this released time was expressed in the form of semester hours, and a full-time load was considered to be the number of semester hours considered at the time to be a full-time load and ranging from 14 to 17 equated semester hours. From the fall of 1974 to the spring of 1976, when the new workload system that is not based upon semester hours was in use, released time was expressed as percentage of full-time load. In some cases, the released time had been clearly expressed as such; for example, on teacher had a one-third time release for work outside the department. However, in others—all of them agreements preceding the fall of 1974--these understandings were still expressed in the form of semester hours. For consistency in reporting data, they were translated into percentages, with the assumption that 15 equated semester hours, the last figure in use and also the average in the study for the eight semesters preceding the new system, was a full-time load.

2. The null hypothesis was tested by a two-tailed t-test with a level of significance of .05. Thus, the critical value of t was determined at this degree of confidence. For the purposes of the t-test, the mean full-time equivalent teacher productivity of student credit hours was divided into two parts--those semesters from the fall of 1970 through the spring of 1974, before the new workload system, and those semesters since the implementation of the new workload system, the fall of 1974 through the spring of 1976.
3. If the calculated value of t had exceeded the critical value of t, the null hypothesis would have been rejected, and the affirmative hypothosis accepted.
4. The hypotheses tested were as follows:

   H_o: The productivity of full-time teachers in the composition, literature, philosophy, and journalism department, as measured by student credit hours, has not changed significantly as a result of the new faculty workload system.

   H_a: The productivity of full-time teachers in the composition, literature, philosophy, and journalism department, as measured by student credit hours, has changed significantly as a result of the new faculty workload system.

X. RESULTS

Table 1 just below summaraizes the data contained in Appendix B. It gives the mean student credit hours produced by one full-time-equivalent teacher in the composition, literature, philosophy, and journalism department for each semester from the fall of 1970 through the spring of 1976 and the standard deviation of each mean.

Table 1

Composition, Literature, Philosophy, and Journalism Department, Black Hawk College, Full-Time Equivalent Teachers and Credit-Hour Means by Semester under Two Workload Systems

Workload System	Semester	Credit-Hour Mean	Standard Deviation	Full-Time Equivalent Teachers
Old	Fall, 1970	269.35	64.92	14.29
Old	Spring, 1971	242.62	95.97	14.29
Old	Fall, 1971	314.69	75.39	14.29
Old	Spring, 1972	252.27	74.14	14.29
Old	Fall, 1972	360.17	65.72	14.41
Old	Spring, 1973	290.83	82.79	13.41
Old	Fall, 1973	330.98	74.24	14.33
Old	Spring, 1974	292.80	67.66	13.33
New	Fall, 1974	320.07	83.72	12.90
New	Spring, 1975	286.43	92.99	12.90
New	Fall, 1975	330.09	66.61	12.93
New	Spring, 1976	283.63	105.04	13.93

Table 2 just below displays these means in bar graph form:

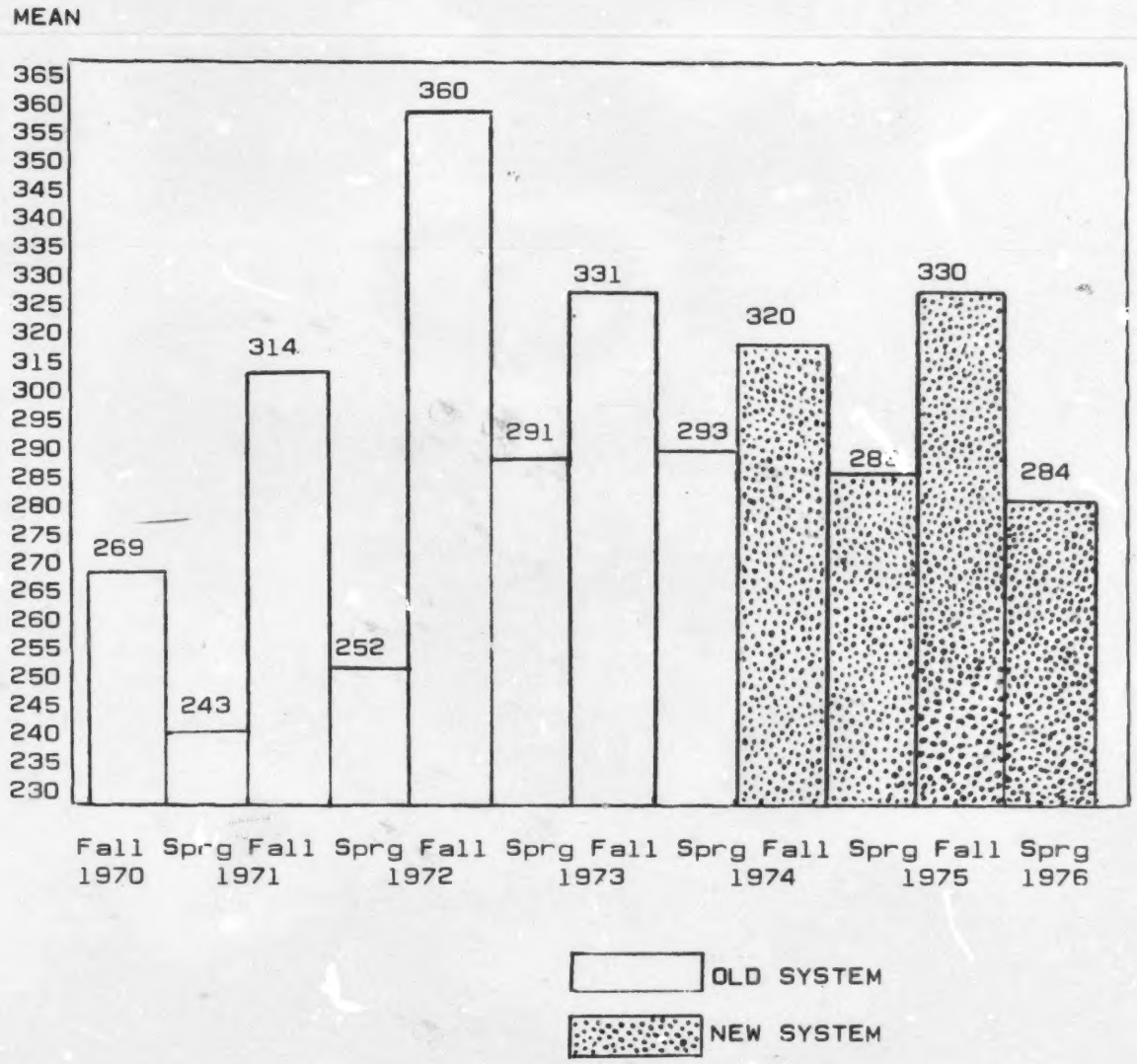

Table 2

Composition, Literature, Philosophy, and Journalism Department, Black Hawk College, Credit Hour Means by Semester under Two Workload Systems

Appendix C and D give the calculations used in the t-test of this data which was used to determine whether or not the student credit hours produced by the full-time equivalent teachers in the composition, literature, philosophy, and journalism department have changed significantly since the implementation of the new workload system. Table 3 just below summarizes the analysis of this data that was undertaken in the t-test, which was used to test the null hypothesis. If the value of t had exceeded the critical value of t, either negatively or positively, the null hypothesis would have been rejected and the affirmative hypothesis accepted.

Table 3

Analysis of Data in T-Test

	Semesters Studied N	Mean Score $\bar{X}$	Standard Deviation S
Prior Workload Systems	8	294.25	24.92
New Workload System	4	305.00	20.36

$t = -.798$ $P < .05$

Degrees of Freedom = 10

Critical Value of t at .05 = 2.228
level of significance

Since the value of t did not exceed the critical value of t, either negatively or positively, the null hypothesis was retained, and the conclusion was reached that the productivity of full-time teachers in the composition, literature, philosophy, and journalism department, as measured by student credit hours at mid-semester, has not changed significantly as a result of the new faculty workload system.

XI. CONCLUSIONS AND SIGNIFICANCE

This study showed that the mean of credit hours produced at mid-semester by full-time teachers in the composition, literature, philosophy, and journalism department has increased 10.75 hours on an average per semester since the implementation of the new workload system. (See Appendix C.) The t-test that was used in this study showed that such an increase is of no statistical significance at the .05 confidence level. This conclusion shows an actual temporary increase of 3.66%, again less than the 5% significance level suggested earlier in the study. Thus, one can say that full-time teacher productivity of student credit hours at mid-semester has remained essentially the same under the new workload system. Furthermore, since this system is based upon departmental goals determined by past departmental performance, such a situation could be expected in a department that has been meeting its goals, such as this one has.

The findings of this study are of significance to Black Hawk College in two ways. First of all, they have financial significance because the college's main sources of revenue are based upon the production of student credit hours. Administrators have reported that, based upon an increase in class size, they conclude that teacher productivity has increased under the new workload system, but, as this study showed, such has not been the case in the composition, literature, philosophy, and journalism department. On the other hand, this study also showed that the student-credit-hour productivity of full-time teachers in the composition, literature, philosophy, and journalism department has not decreased under the new workload system or as a result of changes in class size in remedial English or newly developed literature courses. Thus, these worthwhile changes have been made with no loss of revenue per full-time teacher.

Secondly, in view of the previously stated advantages of the new workload system, including its flexibility, and the fact that full-time teacher productivity in the department has been essentially unchanged under it, at least at this time, this study justifies the continuation of this system in this department. It also suggests that general departmental satisfaction with the system does not result from an actual reduction in workload but from other factors. Even if the new system does not result in an increase in teacher productivity, then, it may be that it results in higher teacher morale and productivity in other ways than quantitatively.

XII. FURTHER STUDIES

As was stated earlier, this study has certain clear limitations because it was limited to one department during one time period. Thus, to check the validity of its conclusions, it is necessary that it be continued on an annual basis in the composition, literature, philosophy, and journalism department now that the methods for collecting and treating the data have been determined. In such a way, it can serve as an additional check upon the continued effectiveness of the workload system. Furthermore, it is necessary to extend this type of study to other departments to determine the system's effect there as well. In such a way, a more meaningful conclusion concerning the effect of the system upon teacher productivity in terms of student credit hours can be reached.

This study, however, surveyed only one aspect of the new workload system; additional studies are needed to cover all that is currently considered to be significant in relation to workload: the effect of new preparations, the effect on quality of instruction, the effect on the development of new delivery systems and teaching materials, the effect of the use of individualized instruction, and the effect on the undertaking of an completion of unassigned tasks by faculty. Such studies could result in a more complete, and therefore a more conclusive, evaluation of the new workload system.

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APPENDIX A: FORM OF SURVEY OF FACULTY FOR RELEASED TIME DATA

April 28, 1976

TO: Full-Time Members of CLPJ Department
FROM: Mary Stevens
SUBJECT: Need Information

I'm doing a statistical study of teacher load in this department for a Nova practicum. It is very important that I have accurate information on the number of hours of or percentage of released time that each of you has had since the fall of 1970. Therefore, would you please fill in the blanks below. If you are not sure of the accuracy of anything,please put a question mark. Even if you have had no released time, please return this to me so that I will know that. Thank you.

NAME_____

ACADEMIC YEAR	SEMESTER	AMOUNT OF RELEASED TIME	REASON
1970	Fall		
1971	Spring		
1971	Fall		
1972	Spring		
1972	Fall		
1973	Spring		
1973	Fall		
1974	Spring		
1974	Fall		
1975	Spring		
1975	Fall		
1976	Spring		

APPENDIX B: DATA ON WORKLOAD AND RELEASED TIME for All Full-Time Teachers in the Composition, Literature, Philosophy, and Journalism Department, Black Hawk College, Quad-Cities Campus

1970-71 Academic Year[14-hour equated load]

	FALL		SPRING	
	Student Credit Hours at Mid-Semester	Hours of Released Time	Student Credit Hours at Mid-Semester	Hours of Released Time
Teacher A	175	5	124	5
Teacher B	348	0	318	0
Teacher C	133	0	101	0
Teacher D	204	0	158	0
Teacher E	Not Employed		Not Employed	
Teacher F	300	1	144	1
Teacher G	213	4	144	4
Teacher H	249	0	279	0
Teacher I	264	0	132	0
Teacher J	309	0	315	0
Teacher K	270	0	270	0
Teacher L	240	0	294	0
Teacher M	306	0	402	0
Teacher N	288	0	261	0
Teacher O	204	0	198	0
Teacher P	346	0	327	0
Teacher Q	Not Employed		Not Employed	
Teacher R	Not Employed		Not Employed	
Teacher S	Not Employed		Not Employed	
TOTALS	3849	10	3467	10
MEAN = 269.35			MEAN = 242.62	
STANDARD DEVIATION = 64.92			STANDARD DEVIATION = 95.97	
FTE TEACHERS = 14.29			FTE TEACHERS = 14.29	

APPENDIX B CONTINUED

1971-72 Academic Year (14-hour equated load)

	FALL		SPRING	
	Student Credit Hours at Mid-Semester	Hours of Released Time	Student Credit Hours at Mid-Semester	Hours of Released Time
Teacher A	451	5	241	5
Teacher B	440	0	360	0
Teacher C	225	0	287	0
Teacher D	217	0	219	0
Teacher E	Not Employed		Not Employed	
Teacher F	274	1	78	1
Teacher G	220	4	177	4
Teacher H	324	0	189	0
Teacher I	254	0	186	0
Teacher J	279	0	252	0
Teacher K	282	0	312	0
Teacher L	276	0	242	0
Teacher M	319	0	348	0
Teacher N	372	0	213	0
Teacher O	Not Employed		Not Employed	
Teacher P	259	0	228	0
Teacher Q	305	0	273	0
Teacher R	Not Employed		Not Employed	
Teacher S	Not Employed		Not Employed	
TOTALS	4497	10	3605	10
MEAN =	314.69		252.27	
STANDARD DEVIATION =	75.39		74.14	
FTE TEACHERS =	14.29		14.29	

APPENDIX B CONTINUED

1972-73 Academic Year (17-hour equated load)

	FALL		SPRING	
	Student Credit Hours at Mid-Semester	Hours of Released Time	Student Credit Hours at Mid-Semester	Hours of Released Time
Teacher A	340	5	211	5
Teacher B	450	0	456	0
Teacher C	347	0	214	0
Teacher D	276	0	327	0
Teacher E	373	0	327	0
Teacher F	354	1	255	1
Teacher G	219	4	255	4
Teacher H	237	0	282	0
Teacher I	327	0	135	0
Teacher J	333	0	321	0
Teacher K	396	0	237	0
Teacher L	387	0	267	0
Teacher M	393	0	381	0
Teacher N	404	0	232	0
Teacher O	Not Employed		Not Employed	
Teacher P	Not Employed		Not Employed	
Teacher Q	Not Employed		Not Employed	
Teacher R	354	0	Not Employed	
Teacher S	Not Employed		Not Employed	
TOTALS	5190	10	3900	10
MEAN =	360.17		290.83	
STANDARD DEVIATION =	65.72		82.79	
FTE TEACHERS =	14.41		13.41	

APPENDIX B CONTINUED

1973-74 Academic Year (15-hour equated load)

	FALL		SPRING	
	Student Credit Hours at Mid-Semester	Hours of Released Time	Student Credit Hours at Mid-Semester	Hours of Released Time
Teacher A	270	5	Not Employed	
Teacher B	489	0	432	0
Teacher C	274	0	258	0
Teacher D	231	0	282	0
Teacher E	423	0	378	0
Teacher F	243	1	267	1
Teacher G	264	4	222	4
Teacher H	339	0	237	0
Teacher I	300	0	171	0
Teacher J	354	0	280	0
Teacher K	345	0	276	0
Teacher L	291	0	240	0
Teacher M	327	0	267	0
Teacher N	347	0	318	0
Teacher O	Not Employed		Not Employed	
Teacher P	Not Employed		Not Employed	
Teacher Q	246	0	275	0
Teacher R	Not Employed		Not Employed	
Teacher S	Not Employed		Not Employed	
TOTALS	4743	10	3903	5
MEAN = 330.98			MEAN = 292.80	
STANDARD DEVIATION = 74.24			STANDARD DEVIATION = 67.66	
FTE TEACHERS = 14.33			FTE TEACHERS = 13.33	

APPENDIX B CONTINUED

1974-75 Academic Year (New Workload)

	FALL		SPRING	
	Student Credit Hours at Mid-Semester	Hours of Released Time	Student Credit Hours at Mid-Semester	Hours of Released Time
Teacher A	243	0	357	0
Teacher B	432	0	477	0
Teacher C	251	50%*	345	50%*
Teacher D	264	0	174	0
Teacher E	339	0	242	0
Teacher F	418	7%	159	7%
Teacher G	195	27%	192	27%
Teacher H	174	0	213	0
Teacher I	297	0	207	0
Teacher J	282	0	213	0
Teacher K	339	0	279	0
Teacher L	252	0	291	0
Teacher M	282	0	294	0
Teacher N	361	0	252	0
Teacher O	Not Employed		Not Employed	
Teacher Q	Not Employed		Not Employed	
Teacher R	Not Employed		Not Employed	
Teacher S	Not Employed		Not Employed	
TOTALS	4129	.84FTE	3695	.84FTE
MEAN = 320.08			MEAN = 286.43	
STANDARD DEVIATION = 83.72			STANDARD DEVIATION = 92.99	
FTE TEACHERS = 12.9			FTE TEACHERS = 12.9	

*half-time sabbatical leave for one-year

APPENDIX B CONTINUED

1975-76 Academic Year (New Workload)

	FALL		SPRING	
	Student Credit Hours at Mid-Semester	Hours of Released Time	Student Credit Hours at Mid-Semester	Hours of Released Time
Teacher A	399	0	252	0
Teacher B	384	20%	519	0
Teacher C	370	0	445	0
Teacher D	207	0	264	0
Teacher E	274	20%	333	0
Teacher F	303	7%	196	20%
Teacher G	273	27%	162	27%
Teacher H	270	0	285	0
Teacher I	297	0	231	0
Teacher J	312	33%	154	33%
Teacher K	369	0	237	0
Teacher L	291	0	330	0
Teacher M	291	0	264	0
Teacher N	Not Employed		Not Employed	
Teacher O	Not Employed		Not Employed	
Teacher P	Not Employed		Not Employed	
Teacher Q	Not Employed		Not Employed	
Teacher R	Not Employed		Not Employed	
Teacher S	228	0	279	0
TOTALS	4268	1.07	3951	.8

MEAN = 330.09
STANDARD DEVIATION = 66.61
FTE TEACHERS = 12.93

MEAN = 283.63
STANDARD DEVIATION = 105.04
FTE TEACHERS = 13.93

APPENDIX C: CALCULATION OF T-TEST

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

$$t = \frac{294.25 - 305.00}{\sqrt{\frac{[24.92]^2}{8} + \frac{[20.36]^2}{4}}}$$

$$t = \frac{-10.75}{\sqrt{181.26}}$$

$$t = -.798$$

APPENDIX D: CALCULATION OF STANDARD DEVIATIONS

$$s = \sqrt{\frac{N[\Sigma x^2] - [\Sigma x]^2}{N^2}}$$

$$s_1 = \sqrt{\frac{8[703668] - [2354]^2}{144}}$$

$$s_1 = \sqrt{620}$$

$$s_1 = \underline{\underline{24.92}}$$

$$s_2 = \sqrt{\frac{4[373892] - [1220]^2}{16}}$$

$$s_2 = \sqrt{414.4}$$

$$s_2 = \underline{\underline{20.36}}$$

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